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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of Item 2.2.05.05a.i [Index Number 259]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.2.05.05a.i [Index Number 259] to demonstrate that the Main Control Room Emergency Habitability System (VES) components identified as seismic Category I in the Combined License (COL) Appendix C, Table 2.2.5-1 are designed and constructed in accordance with applicable requirements.

The closure process for this ITAAC is based on the guidance described in NEI 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52," which was endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,

A handwritten signature in black ink that reads "Jamie Coleman".

Jamie M. Coleman
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.2.05.05a.i [Index Number 259]

JMC/AD/sfr

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cc: Regional Administrator, Region II
 Director, Office of Nuclear Reactor Regulation (NRR)
 Director, Vogtle Project Office NRR
 Senior Resident Inspector – Vogtle 3 & 4

**Southern Nuclear Operating Company
ND-23-0071
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.2.05.05a.i [Index Number 259]**

ITAAC Statement

Design Commitment:

5.a) The seismic Category I equipment identified in Table 2.2.5-1 can withstand seismic design basis loads without loss of safety function.

Inspections, Tests, Analyses:

- i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.2.5-1 are located on the Nuclear Island.
- ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed.
- iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

Acceptance Criteria:

- i) The seismic Category I equipment identified in Table 2.2.5-1 is located on the Nuclear Island.
- ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.
- iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

ITAAC Determination Basis

This ITAAC requires that inspections, tests, and analyses be performed and documented to ensure the Main Control Room Emergency Habitability System (VES) equipment identified as seismic Category I in the Combined License (COL) Appendix C, Table 2.2.5-1 (the Table) is designed and constructed in accordance with applicable requirements.

- i) The seismic Category I equipment identified in Table 2.2.5-1 is located on the Nuclear Island.

To assure that seismic Category I equipment can withstand seismic design basis loads without loss of safety function, all of the equipment in the Table is designed to be located on the seismic Category I Nuclear Island. In accordance with Equipment Qualification (EQ) ITAAC As-built Walkdown Guideline and the EQ ITAAC As-built Installation Documentation Guideline (References 1 and 2), an inspection was conducted of the VES to confirm the satisfactory installation of the seismically qualified equipment. The inspection includes verification of equipment make/model/serial number and verification of equipment location (Building, Elevation, Room). The EQ As-Built Reconciliation Reports (EQRRs) (Reference 3) identified in Attachment A document the results of the inspection and conclude that the seismic Category I equipment is located on the Nuclear Island.

ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.

Seismic Category I components in the Table require type tests and/or analyses to demonstrate structural integrity and operability. Structural integrity of the seismic Category I valves, as well as other passive seismic Category I mechanical components, is demonstrated by analysis in accordance with American Society of Mechanical Engineers (ASME) Code Section III (Reference 4). Functionality of the subset of active safety-related valves under seismic loads is determined using the guidance of ASME QME-1-2007 (Reference 5).

Safety-related (Class 1E) electrical equipment in the Table is seismically qualified by type testing, analysis, or a combination of type tests and analysis in accordance with Institute of Electrical and Electronics Engineers (IEEE) Standard 344-1987 (Reference 6). This equipment includes safety-related (Class 1E) field sensors and the safety-related active valve accessories such as electric actuators, position switches, pilot solenoid valves and electrical connector assemblies. The specific qualification method (i.e., type testing, analysis, or combination) used for each piece of equipment in the Table is identified in Attachment A. Additional information about the methods used to qualify AP1000 safety-related equipment is provided in the Updated Final Safety Analysis Report (UFSAR) Appendix 3D (Reference 7). The EQ Reports (Reference 8) identified in Attachment A contain applicable test reports and associated documentation and conclude that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.

iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

An inspection was conducted to confirm the satisfactory installation of the seismically qualified equipment in the Table. The inspection verifies the equipment make/model/serial number, as-designed equipment mounting orientation, anchorage and clearances, and electrical and other interfaces. The documentation of installed configuration of seismically qualified equipment includes photographs and/or sketches/drawings of equipment/mounting/interfaces.

As part of the seismic qualification program, consideration is given to the definition of the clearances needed around the equipment mounted in the plant to permit the equipment to move during a postulated seismic event without causing impact between adjacent pieces of safety-related equipment. When required, seismic testing by measuring the maximum dynamic relative displacement of the top and bottom of the equipment was performed. EQ Reports (Reference 8) identify the equipment mounting employed for qualification and establish interface requirements for assuring that subsequent in-plant installation does not degrade the established qualification. Interface requirements are defined based on the test configuration and other design requirements.

Attachment A identifies the EQRRs (Reference 3) completed to verify that the as-built seismic Category I equipment listed in the Table, including anchorage, are seismically bounded by the tested or analyzed conditions, IEEE Standard 344-1987 (Reference 6), and NRC Regulatory Guide 1.100 (Reference 9).

Together, these reports (References 3 and 8) provide evidence that the ITAAC Acceptance Criteria requirements are met:

- The seismic Category I equipment identified in Table 2.2.5-1 is located on the Nuclear Island;
- A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function; and
- A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

References 3 and 8 are available for NRC inspection as part of the Unit 4 ITAAC 2.2.05.05a.i Completion Package (Reference 10).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all ITAAC findings pertaining to the subject ITAAC and associated corrective actions. This finding review, which included now-consolidated ITAAC Indexes 260 and 261, found the following relevant ITAAC findings associated with this ITAAC:

- Notice of Nonconformance 99901412/2012-201-02 (Closed – ML18152B785)

The corrective actions for this finding have been completed and the finding is closed. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.2.05.05a.i (Reference 10) and is available for NRC review

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.2.05.05a.i was performed for VEGP Unit 4 and that the prescribed acceptance criteria are met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. ND-RA-001-014, EQ ITAAC As-built Walkdown Guideline, Version 3.1
2. ND-RA-001-016, EQ ITAAC As-built Installation Documentation Guideline, Version 1.0
3. As-Built EQ Reconciliation Reports (EQRRs) as identified in Attachment A for Unit 4
4. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section III, "Rules for Construction of Nuclear Power Plant Components," 1998 Edition with 2000 Addenda

5. ASME QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants," The American Society of Mechanical Engineers, June 2007
6. IEEE Standard 344-1987, "IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations"
7. Vogtle 3&4 Updated Final Safety Analysis Report Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment Revision 11.1"
8. Equipment Qualification (EQ) Reports as identified in Attachment A
9. Regulatory Guide 1.100, Rev. 2, "Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants"
10. 2.2.05.05a.i-U4-CP-Rev0, "Completion Package for Unit 4 ITAAC 2.2.05.05a.i [Index Number 259]"

Attachment A

System: Main Control Room Emergency Habitability System

Equipment Name *	Tag No. *	Seismic Cat. I *	Type of Qual.	EQ Reports	As-Built EQRR
MCR Load Shed Panel 1	VES-EP-01	Yes	Type Testing	SV4-EP10-VBR-003 / SV4-EP10-VBR-004	2.2.05.05a.i-U4-EQRR-PCD002
MCR Load Shed Panel 2	VES-EP-02	Yes	Type Testing	SV4-EP10-VBR-003 / SV4-EP10-VBR-004	2.2.05.05a.i-U4-EQRR-PCD002
Emergency Air Storage Tank 01	VES-MT-01	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 02	VES-MT-02	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 03	VES-MT-03	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 04	VES-MT-04	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 05	VES-MT-05	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 06	VES-MT-06	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 07	VES-MT-07	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 08	VES-MT-08	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 09	VES-MT-09	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 10	VES-MT-10	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 11	VES-MT-11	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 12	VES-MT-12	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 13	VES-MT-13	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 14	VES-MT-14	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 15	VES-MT-15	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 16	VES-MT-16	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 17	VES-MT-17	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 18	VES-MT-18	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 19	VES-MT-19	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003

Equipment Name +	Tag No. +	Seismic Cat. I +	Type of Qual.	EQ Reports	As-Built EQRR
Emergency Air Storage Tank 20	VES-MT-20	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 21	VES-MT-21	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 22	VES-MT-22	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 23	VES-MT-23	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 24	VES-MT-24	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 25	VES-MT-25	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 26	VES-MT-26	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 27	VES-MT-27	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 28	VES-MT-28	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 29	VES-MT-29	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 30	VES-MT-30	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 31	VES-MT-31	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Emergency Air Storage Tank 32	VES-MT-32	Yes	Analysis	APP-MS23-VDR-001	2.2.05.05a.i-U4-EQRR-PCD003
Air Delivery Alternate Isolation Valve	VES-PL-V001	Yes	Type Testing & Analysis	SV4-PV02-VBR-010 / SV4-PV02-VBR-009	2.2.05.05a.i-U4-EQRR-PCD001
Eductor Flow Path Isolation Valve	VES-PL-V045	Yes	Type Testing & Analysis	SV4-PV02-VBR-010 / SV4-PV02-VBR-009	2.2.05.05a.i-U4-EQRR-PCD001
Eductor Bypass Isolation Valve	VES-PL-V046	Yes	Type Testing & Analysis	SV4-PV02-VBR-010 / SV4-PV02-VBR-009	2.2.05.05a.i-U4-EQRR-PCD001
Pressure Regulating Valve A	VES-PL-V002A	Yes	Type Testing & Analysis	SV4-PV15-VBR-002 / SV4-PV15-VBR-001	2.2.05.05a.i-U4-EQRR-PCD001
Pressure Regulating Valve B	VES-PL-V002B	Yes	Type Testing & Analysis	SV4-PV15-VBR-002 / SV4-PV15-VBR-001	2.2.05.05a.i-U4-EQRR-PCD001
MCR Air Delivery Isolation Valve A	VES-PL-V005A	Yes	Type Testing & Analysis	SV4-PV13-VBR-012 / SV4-PV13-VBR-011	2.2.05.05a.i-U4-EQRR-PCD001
MCR Air Delivery Isolation Valve B	VES-PL-V005B	Yes	Type Testing & Analysis	SV4-PV13-VBR-012 / SV4-PV13-VBR-011	2.2.05.05a.i-U4-EQRR-PCD001

Equipment Name *	Tag No. *	Seismic Cat. I *	Type of Qual.	EQ Reports	As-Built EQRR
Temporary Instrument Isolation Valve A	VES-PL-V018	Yes	Type Testing & Analysis	SV4-PV02-VBR-010 / SV4-PV02-VBR-009	2.2.05.05a.i-U4-EQRR-PCD001
Temporary Instrument Isolation Valve B	VES-PL-V019	Yes	Type Testing & Analysis	SV4-PV02-VBR-010 / SV4-PV02-VBR-009	2.2.05.05a.i-U4-EQRR-PCD001
MCR Pressure Relief Isolation Valve A	VES-PL-V022A	Yes	Type Testing & Analysis	SV4-PV11-VBR-004 / SV4-PV11-VBR-003	2.2.05.05a.i-U4-EQRR-PCD001
MCR Pressure Relief Isolation Valve B	VES-PL-V022B	Yes	Type Testing & Analysis	SV4-PV11-VBR-004 / SV4-PV11-VBR-003	2.2.05.05a.i-U4-EQRR-PCD001
Air Tank Safety Relief Valve A	VES-PL-V040A	Yes	Type Testing & Analysis	SV4-PV16-VBR-002 / SV4-PV16-VBR-001	2.2.05.05a.i-U4-EQRR-PCD001
Air Tank Safety Relief Valve B	VES-PL-V040B	Yes	Type Testing & Analysis	SV4-PV16-VBR-002 / SV4-PV16-VBR-001	2.2.05.05a.i-U4-EQRR-PCD001
Air Tank Safety Relief Valve C	VES-PL-V040C	Yes	Type Testing & Analysis	SV4-PV16-VBR-002 / SV4-PV16-VBR-001	2.2.05.05a.i-U4-EQRR-PCD001
Air Tank Safety Relief Valve D	VES-PL-V040D	Yes	Type Testing & Analysis	SV4-PV16-VBR-002 / SV4-PV16-VBR-001	2.2.05.05a.i-U4-EQRR-PCD001
Main Air Flow Path Isolation Valve	VES-PL-V044	Yes	Type Testing & Analysis	SV4-PV02-VBR-010 / SV4-PV02-VBR-009	2.2.05.05a.i-U4-EQRR-PCD001
MCR Air Filtration Line Eductor	VES-PY-N01	Yes	Analysis	SV4-PY82-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line Charcoal Filter	VES-MY-F01	Yes	Analysis	SV4-MS59-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line HEPA Filter	VES-MY-F02	Yes	Analysis	SV4-MS59-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line Postfilter	VES-MY-F03	Yes	Analysis	SV4-MS59-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Gravity Relief Dampers	VES-MD-D001A	Yes	Analysis	SV4-MD27-VGC-850000	2.2.05.05a.i-U4-EQRR-PCD002
MCR Gravity Relief Dampers	VES-MD-D001B	Yes	Analysis	SV4-MD27-VGC-850000	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line Supply Damper	VES-MD-D002	Yes	Analysis	SV4-MD30-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line Supply Damper	VES-MD-D003	Yes	Analysis	SV4-MD30-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line Silencer	VES-MY-Y01	Yes	Analysis	SV4-MY71-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Filtration Line Silencer	VES-MY-Y02	Yes	Analysis	SV4-MY71-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002

Equipment Name +	Tag No. +	Seismic Cat. I +	Type of Qual.	EQ Reports	As-Built EQRR
MCR Air Delivery Line Flow Sensor	VES-003A	Yes	Type Testing & Analysis	SV4-JE54-VBR-002 / SV4-JE54-VBR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Air Delivery Line Flow Sensor	VES-003B	Yes	Type Testing & Analysis	SV4-JE54-VBR-002 / SV4-JE54-VBR-001	2.2.05.05a.i-U4-EQRR-PCD002
MCR Differential Pressure Sensor A	VES-004A	Yes	Type Testing & Analysis	SV4-JE52-VBR-006 / SV4-JE52-VBR-005	2.2.05.05a.i-U4-EQRR-PCD002
MCR Differential Pressure Sensor B	VES-004B	Yes	Type Testing & Analysis	SV4-JE52-VBR-006 / SV4-JE52-VBR-005	2.2.05.05a.i-U4-EQRR-PCD002
MCR Filter Shielding	12401-NS-01	Yes	Type Testing & Analysis	SV4-MS59-VDR-001	2.2.05.05a.i-U4-EQRR-PCD002

+ Excerpt from COL Appendix C Table 2.2.5-1